

CLAIMS

What is claimed is:

1. A method of updating at least one of firmware and software in an electronic device comprising a plurality of update agents, the method comprising:
displaying a list of available update agents to an end-user, the update agents associated with at least one update;
prompting the end-user to select an update agent;
invoking the selected update agent based upon information corresponding to a particular update; and
performing the particular update.
2. The method according to claim 1, further comprising rebooting the electronic device after update completion.
3. The method according to claim 1, further comprising one of resuming and commencing characteristic electronic device operation after update completion.
4. The method according to claim 1, further comprising detecting a need to update at least one of firmware, software, device components, and device configuration during one of power-up and reboot.
5. The method according to claim 1, further comprising displaying a list of available updates, the plurality of update agents each being adapted to process particular updates, wherein prompting an end-user to select a particular update agent may correspond to prompting an end-user to apply a particular update.

6. The method according to claim 1, further comprising:
executing an update application loader;
invoking a boot initialization code;
determining a list of available update agents and corresponding updates; and
determining whether the electronic device needs to be updated by evaluating the
list of available update agents and corresponding updates.

7. The method according to claim 6, further comprising determining an
update agent to invoke from among a plurality of available update agents based upon at
least one of an update type, a name of an update, and a sub-component of a name of an
update, to update at least one of firmware, software, device components, and device
configuration of the electronic device.

8. The method according to claim 1, further comprising:
maintaining a table of update agents in the electronic device, wherein the table of
update agents maps update types to corresponding update agents;
employing the table of update agents to determine an update agent adapted to
process a particular update; and
employing the determined update agent to process the particular update.

9. The method according to claim 1, further comprising conducting a
security check to determine whether a selected update agent is permitted to update
sections of non-volatile memory associated with a particular update.

10. The method according to claim 1, further comprising:
selecting at least one update agent adapted to process a plurality of available
updates; and
applying the available updates using the selected at least one update agent.

11. The method according to claim 1, further comprising maintaining an update agent table, the update agent table comprising at least one of names of a plurality of update agents available in the electronic device, references to the plurality of update agents, and references to locations of the plurality of update agents.

12. The method according to claim 1, further comprising:
determining an update agent to perform an update;
obtaining a reference to the update agent by evaluating an update agent table; and
performing at least one update associated with the update agent.

13. The method according to claim 1, further comprising maintaining a table of update agents, the table of update agents comprising entries providing information corresponding to update agents and associated updates available in the electronic device.

14. The method according to claim 1, further comprising maintaining an update agent table comprising references to a plurality of update agents in the electronic device, the update agent table mapping at least one of update agent names, update agent address locations, type information corresponding to updates that particular update agents are adapted to process, and availability of particular update agents.

15. The method according to claim 14, wherein type information further comprises at least one of a file extension corresponding to a particular update that an update agent is adapted to process and a list of file extensions corresponding to a plurality of updates that an update agent is adapted to process.

16. The method according to claim 1, wherein the electronic device comprises one of a mobile cellular phone handset, a personal digital assistant, a pager, an MP3 player, and a digital camera.

17. An electronic device comprising:
a plurality of update agents in non-volatile memory, each of the update agents being adapted to update at least one of firmware, software, device configuration, and device components;
random access memory; and
an update application loader.

18. The device according to claim 17, wherein the electronic device is adapted to display a list of available update agents from the plurality of update agents in non-volatile memory in the electronic device to an end-user, prompt the end-user to select an update agent, invoke the selected update agent based upon information corresponding to a particular update, and performing the particular update.

19. The device according to claim 18, wherein the electronic device is adapted to reboot after update completion.

20. The device according to claim 18, wherein the electronic device is adapted to one of resume and commence characteristic electronic device operation after update completion.

21. The device according to claim 17, wherein the electronic device is adapted to detect a need to update at least one of firmware, software, device configuration, and device components during one of power-up and reboot.

22. The device according to claim 17, wherein the electronic device is adapted to display a list of available updates, each of the plurality of update agents being adapted to process a particular update, wherein an end-user may be prompted to select a particular update agent, and wherein selecting a particular update agent corresponds to selecting a particular update.

23. The device according to claim 17, wherein the electronic device is adapted to execute an update application loader during one of power-up and reboot, invoke a boot initialization code, determine a list of available update agents and corresponding updates, and determine whether the electronic device needs to be updated by evaluating the list of available update agents and corresponding updates.

24. The device according to claim 17, wherein the electronic device is adapted to determine an update agent to invoke from among a plurality of available update agents based upon at least one of an update type, a name of an update, and a sub-component of a name of an update, to update at least one of firmware, software, device components, and device configuration of the electronic device.

25. The device according to claim 17, wherein the electronic device is adapted to maintain a table of update agents in the electronic device, wherein the table of update agents maps update types to corresponding update agents, the electronic device also being adapted to employ the table of update agents to determine an update agent adapted to process a particular update, and to employ the determined update agent to process the particular update.

26. The device according to claim 17, wherein the electronic device is adapted to conduct a security check to determine whether a selected update agent is permitted to update sections of non-volatile memory associated with a particular update.

27. The device according to claim 17, wherein the electronic device is adapted to determine an update agent adapted to process a plurality of available updates and apply the available updates.

28. The device according to claim 17, wherein the electronic device is adapted to maintain an update agent table, the update agent table comprising at least one of names of a plurality of update agents available in the electronic device, references to the plurality of update agents, and references to locations of the plurality of update agents.

29. The device according to claim 17, wherein the electronic device is adapted to determine an update agent to perform an update, obtain a reference to the update agent by evaluating an update agent table, invoke the update agent, and perform at least one update associated with the update agent.

30. The device according to claim 17, wherein the electronic device is adapted to maintain a table of update agents, the table of update agents comprising entries providing information corresponding to update agents and associated updates available in the electronic device.

31. The device according to claim 17, wherein the electronic device is adapted to maintain an update agent table comprising references to a plurality of update agents in the electronic device, the update agent table mapping at least one of update agent names, update agent address locations, type information corresponding to updates that particular update agents are adapted to process, and availability of particular update agents.

32. The device according to claim 31, wherein type information further comprises at least one of a file extension corresponding to a particular update that an update agent is adapted to process and a list of file extensions corresponding to a plurality of updates that an update agent is adapted to process.

33. The device according to claim 17, wherein the electronic device comprises one of a mobile cellular phone handset, a personal digital assistant, a pager, an MP3 player, and a digital camera.

34. A mobile electronic device comprising:
an update application loader; and
a boot initialization code, wherein the update application loader is adapted to be executed at one of startup and reboot, the update application loader is adapted to invoke the boot initialization code, determine whether the mobile electronic device needs to be updated, locate an update agent, and invoke the located update agent to update at least one of firmware and software in the mobile electronic device.

35. The mobile electronic device according to claim 34, wherein the located update agent that is an application, and the update application loader invokes the located update agent after determining that at least one of firmware and software needs to be updated.

36. The mobile electronic device according to claim 35, wherein the update application loader is adapted to invoke a located update agent and be updated by the located update agent.

37. The mobile electronic device according to claim 35, wherein performing an update comprises installing a second update agent, and the mobile electronic device is adapted to invoke a first update agent to perform the update installing the second update agent in the mobile electronic device.

38. The mobile electronic device according to claim 35, wherein the update application loader is adapted to be updated to a new version by invoking an update agent to update the update application loader.

39. A mobile electronic device comprising:

a boot initialization code; and

an update application loader, wherein the mobile electronic device, during at least one of reboot and power up, is adapted to execute the boot initialization code, and wherein the update application loader is adapted to determine whether the mobile electronic device needs to be updated, and the update application loader is adapted to employ at least one of a plurality of update agents, each of the update agents comprising at least one associated update, wherein the update application loader is adapted to determine an update agent to perform the at least one associated update and select the update agent from among the plurality of available update agents.

40. The mobile electronic device according to claim 39, wherein the update application loader is adapted to select at least one of the plurality of available update agents based upon at least one of a type of update that the update agent is adapted to perform and a particular characteristic associated with a particular update.